

A REVISED CENSUS OF THE TERRESTRIAL
MOLLUSCA OF TASMANIA.

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(Plates lxxxii.-lxxxvii, and fig. 16.)

This paper is confined to the rehabilitation of species. We have endeavoured to supply illustrations of all Tasmanian land shells hitherto unfigured, to simplify the tangled synonymy and to arrange the species in genera and higher groups in harmony with modern classification.

Our work has been facilitated by the loan of the collection of the Tasmanian Museum, for which we are indebted to the kindness of the late Mr. Alexander Morton, the then Curator. Examples of most of the species have been added to the Australian Museum Collection.

Group O R T H U R E T H R A.

Family PUPIDÆ.

Genus V E R T I G O, Müller, 1774.

V E R T I G O L I N C O L N E N S I S, Cox.

Pupa lincolnensis, Cox, Proc. Zool. Soc., 1867, p. 39; *Id.*, Mon. Austr. Land Shells, 1868, p. 80, pl. xiv., f. 16. *Id.*, Pilsbry, Proc. Acad. Nat. Sci. Philad., 1900, p. 428. *Id.*, (*P. tasmanica*) Johnston, Proc. Roy. Soc. Tas., 1882 (1883) p. 144, pl. i.

Hab., Swansea. Obtained plentifully on the sand-dunes; extends to South Australia.

Group H E T E R U R E T H R A.

Family SUCCINEIDÆ.

Genus S U C C I N E A, *Draparnaud*, 1801.

S U C C I N E A A U S T R A L I S, *Ferussac*.

Succinea australis, Ferrussac, Tabl. Syst., ii., 1821, p. 27. *Id.*, Gray, Ann. Phil., 1825, p. 415, pl. ix. *Id.*, Ferrussac and Deshayes, Hist. Nat. Moll. Terr. et Fluv., ii., pt. 2, n.d., p. 137, pl. xi., fig. 11. *Id.*, Quoy et Gaim. Voy. Astrolabe, Zool., ii, 1832, p. 150, pl. xiii., f. 19-23.

S. legrandi, Cox in Legrand, Coll. Mon., 1871, sp. 2.

Var. *queenboroughensis*, Petterd, Mon. Tas. Land Shells, 1879, p. 49.

Hab.—Generally distributed and abundant in moist places.

Obs.—We consider this to be the shell usually called *Succinea strigata*, Pfr., originally described from Port Clarence, Behring Strait. The localities for the types of *S. australis* are Kangaroo Island and the Isles of St. Peter and St. Francis in South Australia.

SUCCINEA TAMARENSIS, *Petterd.*

(Plate lxxxii., fig. 1).

Succinea australis, Fer., var. *tamarensis*, Petterd, Mon. Tas. Land Shells, 1879, p. 49.

This was given as a variety of the generally distributed species of *Succinea* in the Monograph of Tasmanian Shells, but as pointed out *in litteris* by the late Professor Ralph Tate it is very distinct and resembles the European *S. pfeifferi*.

The shell is acuminate, very thin, with a long attenuate spire. It is invariably thickly coated, with a layer of dark mud, and is then most difficult to recognise at its restricted habitat.

It is well worthy of a specific appellation.

Figured from a co-type, 9 mm. long, presented by Mr. W. F. Petterd to the Australian Museum.

Hab.—In the tea-tree swamps on the western margin of the Tamar River, near Launceston.

Group SIGMURETHRA.

Subgroup HOLOPODA.

Family ACAVIDÆ.

Genus ANOGLYPTA, *Martens*, 1860.

ANOGLYPTA LAUNCESTONENSIS, *Reeve.*

Helix launcestonensis, *Reeve*, Proc. Zool. Soc., 1852 (1853), p. 31, pl. xiii., f. 11, a-c.

Anoglypta launcestonensis, *Hedley*, Proc. Linn. Soc. N. S. Wales, (2), vi., 1891, p. 22, pl. ii., f. 5, pl. iii., f. 2.

Hab.—North-east Tasmania. About Scottsdale this fine shell may be collected in the dense myrtle scrub amid decaying vegetable matter and under logs.

Genus CARYODES, *Albers*, 1850.CARYODES DUFRESNII, *Leach*.

Bulinus dufresnii, Leach, Zool. Miscell., ii, 1815, p. 154, p. cxx.
Id., Ferussac, Tabl. Syst., 1821, p. 48.

Caryodes dufresnii, Semper, Reis. Phil., iii., 1870, p. 103, pl. xii.,
 f. 23, 24, 25, pl. xvi., f. 7. *Id.*, Hedley, Proc. Linn. Soc.
 N. S. Wales, (2), vi., 1891, p. 19, pl. i., f. 1, pl. ii., f. 1. *Id.*,
 Pilsbry, Man. Conch., xiii., 1900, p. 125, pl. v., f. 85-93.

Hab.—Generally distributed. It varies within certain limits,
 in both size and colouration, the largest being found in moist
 thick scrub. Noted localities are Mt. Wellington, Ringarooma,
 Magnet Range and Mt. Farrell.

Genus CHLORITIS, *Beck*, 1837.CHLORITIS BRUNONIA, *Johnston*.

(Plate lxxxii, figs. 2, 3, 4).

Helix brunonia, Johnston, Proc. Roy. Soc. Tas., 1887, p. 75.

Obs.—In moist situations in tea-tree scrub. This species is very
 closely allied to, if not identical with *Helix victoriae*, Cox, from
 the opposite mainland of Victoria.

It belongs to a genus not known to occur in Tasmania; so far
 it is only recorded from the locality stated.

Figured from Johnston's type in the Tasmanian Museum.

Hab.—The Springs, Cape Wickham, King Island.

Family BULIMULIDÆ.

Genus BOTHRIEMBRYON, *Pilsbry*, 1894.BOTHRIEMBRYON GUNNII, *Sowerby*.

Bulinus gunnii, Sowerby in Strzelecki, Phy. Descrip. N.S. Wales,
 etc., 1845, p. 298, pl. xix., f. 6 (not 5 as quoted.)

Bulinus tasmanicus, Pfeiffer, Proc. Zool. Soc., 1851 (1853),
 p. 260. *Id.*, Hedley, Proc. Linn. Soc. N. S. Wales, (2), vi.,
 1891, p. 21, pl. ii., f. 2.

Bothriembryon gunnii, Pilsbry, Man. Conch., (2), xiii., 1900,
 p. 18, pl. iii., f. 50, 51, 52.

Var. *brachysoma*, Pilsbry, *op. cit.*, p. 19, pl. iii., f. 53.

Hab.—East Coast. Near the sea on trees and bushes. It is gregarious and very plentiful, but only known as from the east coast.

Subgroup AGNATHOMORPHA.

Family RHYTIDIDÆ.

Genus RHYTIDA, *Albers*, 1860.

RHYTIDA LAMPRA, *Reeve*.

Helix lampra, *Reeve*, *Conch. Icon.*, vii., 1854, pl. clxxxvi., sp. 1295. *Id.*, *Pfeiffer*, *Proc. Zool. Soc.*, 1854 (1855), p. 53.

Rhytida lampra, *Hedley*, *Proc. Linn. Soc. N. S. Wales*, (2), vi., 1893, p. 23, pl. ii., f. 8, 9, pl. iii., f. 3.

Hab.—Confined to the northern portion of Tasmania.

RHYTIDA LAMPROIDES, *Cox*.

Helix lamproides, *Cox*, *Proc. Zool. Soc.*, 1867, p. 722. *Id.*, *Cox*, *Mon. Austr. Land Shells*, 1868, p. 28, pl. x., f. 13. *Id.*, (*Patula*), *Cox* in *Legrand*, *Col. Mon.*, 1871, sp. 7. *Id.*, *Petterd*, *Mon. Tas. Land Shells*, 1879, p. 3.

Hab.—This species is very distinct from all others found in Tasmania; it is strictly confined to the north-western scrubs where it is not uncommon. At the Montague River it reaches its maximum size, being but little inferior to *H. launcestonensis* in this respect. The specimens that Dr. Cox had under review were but half-grown.

The bluntly angular periphery is very characteristic.

RHYTIDA RUGA, *Cox*.

Helix ruga, *Cox* in *Legrand*, *Col. Mon.*, 1871, sp. 24, pl. i., fig. 5. *Id.*, *Petterd*, *Mon. Tas. Land Shells*, 1879, p. 7.

Obs.—This is easily separable from the last and preceding by its constant smaller size and sculpture. It is absolutely distinct and need not be confused with any of its congeners.

Hab.—North, south and east coasts, always in dry positions in open forest, and usually under stones.

It is not known from the western portion of the island.

RHYTIDA SINCLAIRI, Pfeiffer.

Helix sinclairi, Pfr., Zeitsch. Mal., iii., 1845, p. 154. *Id.*, Reeve, Conch. Icon., vii., 1854, p. ccv, f. 1444 a. b. *Id.*, Johnston, Proc. Roy. Soc. Tas., 1882 (1883), p. 49.

Rhytida sinclairi, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix bombycina, Pfr., Proc. Zool. Soc., 1854 (1855), p. 54.

Helix dubitans, Cox in Legrand, Col. Mon., 1871, sp. 29, pl. ii., f. 7.

Helix vexanda, Cox, *op. cit.*, sp. 43.

Helix margatensis, Cox, *op. cit.*, sp. 54.

Helix quaestiosa, Cox, *op. cit.*, s. 59.

Hab.—Generally distributed, but only in favourable positions in dense damp scrub.

Genus PARYPHANTA, Albers, 1850.

PARYPHANTA MILLIGANI, Pfeiffer.

Vitrina milligani, Pfr., Proc. Zool. Soc., 1852 (1854), p. 56. *Id.*, Reeve, Conch. Icon., xiii., 1862, pl. iii., f. 18 a. b.

Hab.—Macquarie Harbour, in the thick pine and myrtle forests.

PARYPHANTA FUMOSA, Tenison Woods.

Helicarion fumosa, Ten. Woods, Proc. Linn. Soc. N. S. Wales, iii., 1879, p. 124, pl. xii., f. 3, 3a.

Paryphanta fumosa, Murdoch, Trans. N.Z. Inst., xxxv., 1904, pp. 156-160, pl. vi.

Obs.—The specific distinction between this and the foregoing is slight.

Hab.—Duck River, Mt. Montague, Mt. Bischoff.

PARYPHANTA DYERI, Petterd.

(Plate lxxxvi., figs. 38, 39, 40).

Helix dyeri, Petterd, Mon. Tas. Land Shells, 1879, p. 40; Journ. Conch., ii., 1879, p. 210.

Obs.—We figure a specimen in the Australian Museum collection from Distillery Creek, Launceston. Height, 1.8; maj. diam., 3; min. diam., 2.2 mm.

Hab.—North Tasmania. The type specimens were collected at Distillery Creek, near Launceston, where the species occurs in the scrub on the banks of the stream.

Genus *DELOS*, *Hutton*, 1904.

DELOS NELSONENSIS, *Brazier*.

Helix nelsonensis, *Brazier*, Proc. Zool. Soc., 1870, p. 661.

Rhenea nelsonensis, *Suter*, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix fulgetrum, *Cox* in *Legrand*, Coll. Mon., 1871, sp. 31, pl. i, f. 11.

Hab.—Generally distributed, but only in certain widely separate localities such as Mt. Nelson, Recherche Bay, Chudleigh, Surrey Hills, Mt. Bischoff, and in the vicinity of Launceston.

Subgroup *AULACOPODA*.

Family *ENDODONTIDÆ*.

Genus *ENDODONTA*, *Albers*, 1850.

ENDODONTA ALBANENSIS, *Cox*.

Helix albanensis, *Cox*, Proc. Zool. Soc., 1867 (1868), p. 723; Mon. Austr. Land Shells, 1868, p. 15, pl. iv., f. 2.

Charopa albanensis, *Hedley*, Proc. Linn. Soc. N. S. Wales, (2), vii., 1892, p. 163, pl. ii., f. 5, 6, 7, 8.

Endodonta albanensis, *Hedley*, Austr. Mus. Rec., ii., 1896, p. 104.

Helix officieri, *Cox* in *Legrand*, Coll. Mon., 1871, sp. 57.

H. macdonaldi, *Cox*, *op. cit.*, sp. 32, pl. i., f. 14.

H. kingstonensis, *Cox*, *op. cit.*, sp. 40, pl. ii., f. 5.

H. stanleyensis, *Petterd*, Mon. Tas. Land Shells, 1879, p. 32.

H. petterdiana, *Taylor*, Journ. Conch., ii., 1879, p. 287.

Hab.—Generally distributed. Extends to Western Australia and N. S. Wales. One of the most abundant species which is extremely plentiful about the Nut at Circular Head.

ENDODONTA ANTIALBA, *Beddome*.

Helix antialba, *Beddome*, Proc. Roy. Soc. Tas., 1879, p. 23
Id., *Petterd*, Mon. Tas. Land Shells, 1879, p. 41.

Endodonta antialba, *Hedley*, Proc. Linn. Soc. N. S. Wales, (2), vii., 1892, p. 166, pl. i., f. 5, 6, 7, 8.

Hab.—Mount Bischoff. Fairly plentiful under logs and in moist positions. Noted for the fact that half the specimens are milk-white and the balance brown colour.

ENDODONTA ARCHITECTONICA, *Brazier*.

(Plate lxxxv., figs. 29, 30, 31.)

Helix architectonica, Brazier, Proc. Zool. Soc., 1871, p. 696.*H. assimilis*, Brazier, *op. cit.*, p. 697 (not *H. assimilis*, H. Adams).*H. spectra*, Cox in Legrand, Col. Mon., 1871, sp. 55.*H. gunnii*, Brazier, Proc. Roy. Soc. Tas., 1876 (1877), p. 168.*Obs.*—The original of our figure (Australian Museum) is from Hobart. Height, 4; maj. diam., 3.3; min. diam., 2.85 mm.*Hab.*—Mount Wellington, Recherche Bay, Myrtle Bank, Mount Farrell, and Magnet Range.ENDODONTA BARRENENSIS, *Petterd*.

(Plate lxxxvii., figs. 41, 42, 43).

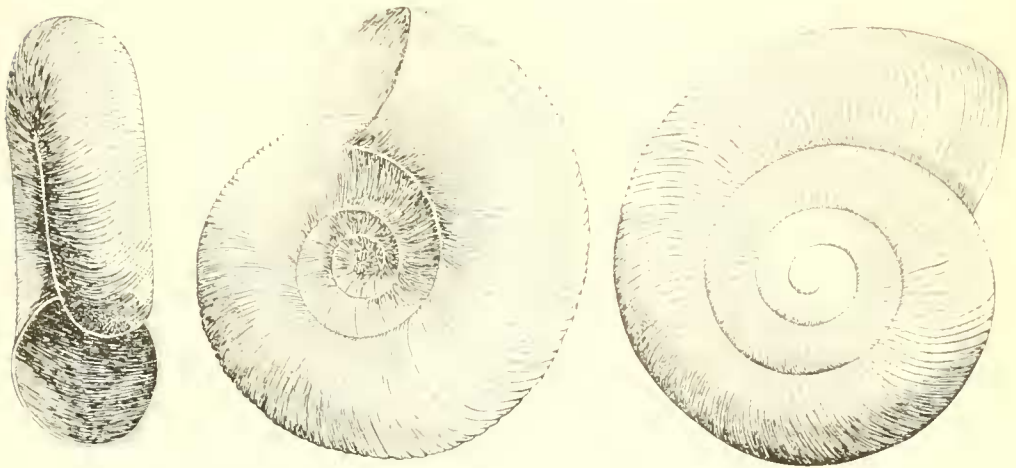
Helix barrenensis, Petterd, Mon. Tas. Land Shells, 1879, p. 38; Journ. Conch., ii., 1879, p. 217.*Obs.*—Drawn from one of the type series in the Tasmanian Museum. Height, 0.85; maj. diam., 2; min. diam., 1.75 mm.*Hab.*—Furneaux Group, Bass Strait. This species is apparently confined to the locality given where it clusters in depressions on the sand dunes.ENDODONTA BASSI, *Brazier*.

Fig. 16.

Helix ammonitoides, Brazier, Proc. Zool. Soc., 1870, p. 661 (not *H. ammonitoides*, Reeve).*Helix bassi*, Brazier, Proc. Zool. Soc., 1871, p. 699.

Helix vicens, Cox in Legrand, Col. Mon., 1871, sp. 30, pl. i., f. 12.

Helix lottah, Petterd, Mon. Tas. Land Shells, 1879, p. 37; Journ. Conch., ii., 1879, p. 216.

Obs.—Our figure was drawn from a specimen in the Tasmanian Museum labelled "Mount Nelson." Height, 0·8; maj. diam., 3; min. diam., 2·4 mm.

Hab.—Launceston, Mount Nelson, and Domain, Hobart.

ENDODONTA DISPAR, *Brazier*.

(Plate lxxxiv., figs. 17, 18, 19.)

Helix dispar, Brazier, Proc. Zool. Soc., 1870, p. 661; *Op. cit.*, 1871, p. 699.

Obs.—Figured from Brazier's type in the Australian Museum. Height, 2; maj. diam., 2·85; min. diam., 2·45 mm.

Hab.—Mount Wellington, Mount Bischoff, Chudleigh, Middlesex, Mount Farrell and Blue Tier.

ENDODONTA HOOKERIANA, *Johnston*.

Helix hookeriana, Johnston in Petterd, Mon. Tas. Land Shells, 1879, p. 38.

Endodonta hookeriana, Hedley, Proc. Linn. Soc. N. S. Wales, xxix., 1904, p. 182, pl. viii., f. 1-3.

Hab.—Surrey Hills. On trunks of dead trees, under moss, and in damp scrub.

ENDODONTA LEGRANDI, *Cox*.

Helix legrandi, Cox, Mon. Austr. Land Shells, 1868, p. 23, pl. xii., f. 7.

Helix kershawi, Petterd, Mon. Tas. Land Shells, 1879, p. 28.

Obs.—The author of this species appears to have distributed *E. ricei*, under this name. What passes in all collections as *H. legrandi* is a species at variance with the original figure and description.

Hab.—Near Launceston, River Mersey, Circular Head, Table Cape, Mt. Bischoff and Mt. Farrell

ENDODONTA RICEI, *Brazier*.

(Plate lxxxiii., figs. 11, 12, 13.)

Helix ricei, Brazier, Proc. Zool. Soc., 1870 (1871), p. 660.*Helix rotella*, Brazier, *op. cit.* (colour variation).*Helix onslowi*, Brazier in Legrand, Coll. Mon., 1871, sp. 46. *Id.*,
Ancey, Journ. de Conch. xlix., 1901, p. 146, footnote.

Obs.—This is usually known by the name of *H. legrandi*, Cox. Authors have compared it with *H. iuloides*, Forbes, but it more nearly approaches *H. funerea*, Cox, from which it differs by narrower umbilicus, greater height in proportion to diameter and finer sculpture. We illustrate an example from Maria Island (in the Tasmanian Museum). Height, 2·5; maj. diam. 4·6; min. diam., 3·7 mm.

Hab.—Generally distributed; it is one of the most widely distributed species and very constant in character, but a white variety has been obtained.

ENDODONTA MIMOSA, *Petterd*.

(Plate lxxxvi., figs. 32, 33, 34.)

Helix mimosa, Petterd, Mon. Tas. Land Shells, 1879, p. 33;
Journ. Conch., ii., 1879, p. 211.

Obs.—A specimen from the Tasmanian Museum, one of the type series, is here figured. Height, 0·85; maj. diam., 1·65; min. diam., 1·35 mm.

Hab.—Launceston. Among mosses on the branches of trees.

ENDODONTA SERICATULA, *Pfeiffer*.*Helix sericatula*, Pfr., Proc. Zool. Soc., 1849 (1850), p. 127. *Id.*,
Reeve, Conch. Icon., vii., 1852, pl. cxxxii., f. 812. *Id.*, Cox,
Mon. Austr. Land Shells, 1868, p. 12, pl. xii., f. 6, 6a.*Helix limula*, Cox, in Legrand, Coll. Mon., 1871, sp. 72.

Hab.—North Tasmania. Extends to N. S. Wales. This has only been found in the scrubs about the northern portion of the island.

ENDODONTA TAMARENSIS, *Petterd*.*Helix tamarensis*, Petterd, Mon. Tas. Land Shells, 1879, p. 30.*Endodonta tamarensis*, Hedley, Proc. Linn. Soc. N. S. Wales,
xxvii., 1903, p. 605, pl. xxxi., f. 18, 19, 20; Austr. Mus.
Rec., ii., 1896, p. 104.

Helix rosacea, Petterd, Journ. Conch., ii., 1879, p. 213 (not *Helix rosacea*, Müller, 1774).

Hab.—North Tasmania. Extends through Victoria to Mount Kosciusko, N. S. Wales. At the rifle butts near Launceston it is extremely abundant; in fact it is the only locality hitherto discovered in this island.

ENDODONTA TASMANIÆ, Cox.

Helix tasmanica, Cox, Mon. Austr. Land Shells, 1868, p. 22, pl. xii., f. 4.

Endodonta tasmanica, Hedley, Aust. Mus. Rec., ii., 1896, p. 104.

Hab.—Mount Wellington, George Bay, and Recherche Bay. Recurs on Mount Kosciusko, N. S. Wales. So far this species has not been detected in the northern or western portions of the island.

ENDODONTA SUBRUGOSA, Brazier.

Helix subrugosa, Brazier in Legrand, Col. Mon., 1871, sp. 68.

Id., Brazier, Proc. Zool. Soc., 1871, p. 697. *Id.*, Petterd, Mon. Tas. Land Shells, 1879, p. 35.

Obs.—This is a really beautiful little shell, very boldly sculptured and differing from its nearest ally, *H. dispar*, by not possessing the bold characteristic tooth inside the aperture. The general sculpture, riblets and finer lines, also differ from that species.

The depression of the last whorl near the aperture is extremely characteristic of the species.

Hab.—Mount Wellington, Chudleigh, Lottah, Blue Tier, Myrtle Bank, Mt. Farrell.

GENUS CYSTOPELTA,¹ Tate, 1881.

CYSTOPELTA PETTERDI, Tate.

Cystopelta petterdi, Tate, Proc. Roy. Soc. Tas., 1880 (1881), p. 17. *Id.*, Hedley, Proc. Linn. Soc. N. S. Wales, (2), v., 1890, p. 44, pl. i.; Hedley, *op. cit.*, vii., 1891, p. 24, pl. iii., f. 5.

¹ This name, proposed by Tate (Proc. Roy. Soc. Tas. 1880-1881-), has escaped the compilers of the Zoological Record.

Obs.—This form is probably related to *Ranfurlya constanceæ*, Suter.²

Hab.—North Tasmania, and extends to Victoria and N.S. Wales. In the vicinity of Launceston this species is gregarious; hiding under logs in somewhat exposed positions. It is not by any means abundant.

CYSTOPELTA BICOLOR, *sp. nov.*

Obs.—The most notable peculiarity of this undoubted new species of *Cystopelta* is the striking colouration; the contrast of the rich brown upper surface with the bright green of the lower portions of the animal at once arrests attention.

The preliminary description may be stated as follows:—Mantle thick, does not nearly cover the whole animal, surface somewhat rough and rugosely wrinkled, colour a rich chocolate-brown, with minute specks of a darker shade; foot, elongate, tapering, of a bright pale-green colour; mucus distinctly green; tentacles four in number, the upper smooth, black at apex; lower part short. Length, 22 millimetres; width, 7 mill.

This slug is apparently confined to the western portion of the island; it is usually found singly in low trees. The specimens were obtained in the head of a fallen Melaluca tree that had smashed down on the scrub and let in the sun. The tree had been down some time, as told by the litter of rotting leaves and sticks. Other examples have been secured under logs, but it may be considered that the animal is usually arboreal in habit and thus, as well as in other respects, differing so essentially from *C. petterdi*. From its habits it is rare or rather difficult to obtain. All the specimens collected are exactly alike, except a slight variation in size.

Hab.—Magnet Range and Upper Pieman River.

Genus LAOMA, *Gray*, 1849.

LAOMA WELDII, *Tenison Woods*.

(Plate lxxxiii., figs. 8, 9, 10.)

Helix weldii, Ten. Woods, Proc. Roy. Soc. Tas. (1876) 1877, p. 160.

Laoma weldii, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.
Petterd, Mon. Tas. Land Shells, 1879, p. 23.

² Suter—Journ. Mal., x., 1903, p. 62, pl. iv. (from the Auckland Islands, N.Z.)

Obs.—Figured from a specimen from Circular Head in the Australian Museum. Height, 1.2; maj. diam., 1.85; min. diam. 1.6 mm.

Hab.—Circular Head. Plentiful around The Nut.

LAOMA MORTI, *Cox.*

Helix morti, Cox, Ann. Mag. Nat. Hist., (3), xiv., 1864, p. 182; Cat. Austr. Land Shells, 1864, p. 22; Mon. Austr. Land Shells, 1868, p. 21, pl. xi., f. 13.

Helix paradoxa, Cox, Cat. Austr. Land Shells, 1864, p. 21.

Helix hobarti, Cox, Mon. Austr. Land Shells, 1868, p. 22 (not pl. xii., f. 11, as quoted).

Helix similis, Cox, Mon. Austr. Land Shells, 1868, p. 23, pl. xii., f. 12 (not *H. similis*, C. B. Adams)

Helix derelicta, Cox in Legrand, Coll. Mon., 1871, sp. 11.

Helix stellata, Brazier, Proc. Zool. Soc., 1870, p. 662.

Helix arenicola, Tate, Proc. Linn. Soc. N. S. Wales, ii., 1878, p. 291.

Helix discors, Petterd, Proc. Roy. Soc. Tas., 1900 (1902), p. 2.

Hab.—Generally distributed. Extends to S. Australia, Victoria and N. S. Wales. Always in dry positions nestling under stones.

LAOMA PICTILIS, *Tate.*

(Plate lxxxvi., figs. 35, 36, 37.)

Helix pictilis, Tate, Proc. Linn. Soc. N. S. Wales, ii., 1878, p. 290.

Id., Petterd, Mon. Tas. Land Shells, 1879, p. 17.

Laoma pictilis, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Obs.—Figured from a specimen in the Australian Museum from Duck Creek, Circular Head. Height, 3.75; maj. diam., 4; min. diam., 3.5 mm.

Hab.—North-west Tasmania. Extends to S. Australia and Victoria. Quite recently this distinct form has been collected at the Alum Rocks, Brown's River road.

LAOMA CÆSUS, *Cox.*

Helix cæsus, Cox, in Legrand, Coll. Mon., 1871, sp. 21, pl. i., f. 4.

Helix occultus, Cox, in Legrand, Coll. Mon., 1871, sp. 23, pl. i., f. 6.

Laoma cæsus, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Hab.—Widely distributed, but very local. At Recherche Bay, Southport, Circular Head, and islands in Bass Straits, it occurs literally in countless numbers, usually but a trifle above tide mark.

LAOMA MINIMA, *Cox.*

Helix minima, Cox, Mon. Austr. Land Shells, 1868, p. 10, pl. xii., f. 8.

Helix collisi, Brazier, Proc. Roy. Soc. Tas., 1876 (1877), p. 168.

Helix henryana, Petterd, Mon. Tas. Land Shells, 1879, p. 21.

Laoma henryana, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix furneauxensis, Petterd, Mon. Tas. Land Shells, 1879, p. 21; Journ. Conch., 1879, p. 215.

Laoma furneauxensis, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Obs.—Dr. Cox's type of *Helix minima*, preserved in the Australian Museum, has served as a standard for the above synonymy.

Hab.—Generally distributed, but never abundant. It is apparently confined to dry positions, hiding under small stones and decaying leaves.

LAOMA HALLI, *Cox.*

Helix halli, Cox in Legrand, Coll. Mon., 1871, sp. 34, pl. ii., f. 9.

Id., Petterd, Mon. Tas. Land Shells, 1879, p. 22.

Laoma halli, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Hab.—Generally distributed and common.

LAOMA SPICERI, *Petterd.*

(Plate lxxxvii., figs. 47, 48, 49, 50.)

Helix spiceri, Petterd, Mon. Tas. Land Shells, 1879, p. 23; Journ. Conch., ii., 1879 p. 212.

Obs.—Drawn from a specimen in the Tasmanian Museum labelled New Norfolk. Height, 0·95; maj. diam., 1·5; min. diam., 1·3 mm.

Hab.—Generally distributed. This has been collected at many widely separated localities, at all of which it is fairly plentiful.

LAOMA TRUCANINI, *Petterd.*

(Plate lxxxvii., figs. 44, 45, 46.)

Helix truncanini, Petterd, Mon. Tas. Land Shells, 1879, p. 19.

Luoma pipaensis, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Obs.—Drawn from a specimen in the Australian Museum Height, 1.45 ; maj. diam., 2.2 ; min. diam., 1.85 mm.

Hab.—Launceston, near the First Basin ; among moss on the branches and trunks of trees ; also more sparingly on rocks overgrown by mosses.

It is of gregarious habit being commonly found in large numbers. It has also been collected at the Piper River under similar conditions. It is certainly distinct from all the other small *Helices* with which it associates.

LAOMA JUNGERMANNIÆ, *Petterd.*

(Plate lxxxv., figs. 26, 27, 28.)

Helix jungermanniæ, Petterd, Mon. Tas. Land Shells, 1879, p. 17 ; Journ. Conch., ii., 1879, p. 213.

Flammulina jungermanniæ, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Obs.—Figured from an author's specimen in the Australian Museum. Height, 1.5 ; maj. diam., 2.5 ; min. diam., 2.05 mm.

Hab.—Launceston, found almost under the same conditions as the last but not nearly so plentiful.

LAOMA PARVISSIMA, *Cox.*

Helix parvissima, Cox in Legrand, Coll. Mon., 1871, sp. 39, pl. ii., f. 1.

Endodonta parvissima, Hedley, Austr. Mus. Rec., ii., 1896, p. 104. *Id.*, Petterd, Mon. Tas. Land Shells, 1879, p. 22.

Hab.—Generally distributed. Extends to Mount Kosciuszko, N. S. Wales.

This is a minute conical species that cannot well be mistaken for any other. It is remarkably abundant at Mount Bischoff, Mount Farrell, Brown River, and at the Middlesex Plains, all widely separate localities. It would appear to prefer somewhat dry positions under stones and among decaying leaves.

LAOMA LUCKMANII, *Brazier.*

(Plate lxxxii., figs. 5, 6, 7.)

Helix neglecta, Brazier, Proc. Zool. Soc., 1870 (1871), p. 660 (not *H. neglecta*, Draparnaud). *Id.*, Legrand, Coll. Mon., sp. 47.

H. luckmanii, Brazier, Proc. Roy. Soc. Tas., 1876 (1877), p. 168.

Helix sitiens, Cox in Legrand, Coll. Mon., 1871, sp. 60.

Obs.—Our figure is derived from an authentic specimen in the Australian Museum, labelled Mount Wellington. Height, 1·5; maj. diam., 2·95; min. diam., 2·35 mm.

Hab.—Knocklofty, Mount Nelson, and foot of Mount Wellington in the south of the island, and the Cataract and Distillery Creek, near Launceston.

Genus FLAMMULINA, *Martens*, 1873.

FLAMMULINA MARCHIANÆ, *Cox*.

Helix marchianæ, Cox in Legrand, Coll. Mon., 1871, sp. 25, pl. i., f. 7.

Flammulina marchianæ, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix fuscoradiata, Cox in Legrand, Coll. Mon., 1871, sp. 61, pl. ii., f. 2.

Hab.—Widely distributed, but confined to a few localities where it is numerous, notably Cora Linn, Springs, Mount Wellington, and near Ben Lomond. It is a very distinct form, having a remarkable glassy appearance. On Ben Lomond it occurs associating with *Helix lampra* and *Helix ruga*.

FLAMMULINA HAMILTONI, *Cox*.

Helix hamiltoni, Cox, Proc. Zool. Soc., 1867 (1868), p. 722; Mon. Austr. Land Shells, 1868, p. 32, pl. vii., f. 2, 2a.

Flammulina hamiltoni, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix stephensi, Cox in Legrand, Coll. Mon., 1871, sp. 26, pl. ii., f. 8. *Id.*, Johnston, Proc. Roy. Soc. Tas., 1879 (1880), p. 48.

Helix plexus, Cox in Legrand, Coll. Mon., 1871, sp. 28, pl. i., f. 10.

Helix cæpta, Cox, *op. cit.*, sp. 41, pl. ii., f. 13.

Helix irvinae, Cox, *op. cit.*, sp. 71.

Helix pascoei, Brazier, *op. cit.*, sp. 65.

Helix scrupulus, Cox, *op. cit.*, sp. 76.

Helix ducani, Cox, *op. cit.*, sp. 56.

Helix spoliata, Cox, *op. cit.*, sp. 75.

Helix floodi, Brazier, Proc. Zool. Soc., 1871 (1872), p. 697.

Helix milligani, Brazier, *op. cit.*, p. 698.

Helix langleyana, Brazier, Proc. Linn. Soc. N. S. Wales, i., 1875, p. 18.

Helix kingi, Brazier, Proc. Zool. Soc., 1870, p. 662.

Hab.—This is perhaps the most abundant, most widely distributed, and at the same time most variable species as to size that occurs in the island. Examples from the Upper Leven River are about three times the size of those collected at Mount Wellington, although living apparently under like conditions. At Mount Farrell, and at the Mount Range they are also very fine, while at Scottsdale they are small and stunted. There is a remote possibility that they represent a group and not a single species.

FLAMMULINA WYNYARDENSIS, *Petterd.*

Helix wynyardensis, Petterd, Mon. Tas. Land Shells, 1879, p. 8.

Obs.—This is a very distinct species and may be separated from all congeners by the prominent close-set riblets and by the very distinct colouration of the upper and lower surfaces. In the latter character it resembles *Helix lampra*, but not in any other manner. The sculpture is absolutely distinct from *Helix hamiltoni*. It is confined to the dense scrubs of the localities mentioned.

Hab.—Table Cape, Circular Head.

FLAMMULINA SAVESI, *Petterd.*

Helix savesi, Petterd, Mon. Tas. Land Shells, 1879, p. 12.

Obs.—The coarse sculpture and thin texture distinguish this species which peculiarities are remarkably constant and separate it from the two preceding species.

Hab.—Table Cape and Rocky Cape. Found in the thick scrubs with the last.

FLAMMULINA FORDEI, *Brazier.*

Helix fordei, Brazier, Proc. Zool. Soc., 1870, p. 662. *Id.*, Johnston, Proc. Roy. Soc. Tas., 1879 (1880), p. 50.

Flammulina fordei, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix trajectory, Cox in Legrand, Coll. Mon., 1871, sp. 36, pl. ii., f. 6.

Helix mixta, Cox, *op. cit.*, sp. 38, pl. ii., f. 11.

H. tranquilla, Cox, *op. cit.*, sp. 37, pl. ii., f. 3.

Helix tabescens, Cox, *op. cit.*, sp. 77.

Helix allporti, Legrand, *op. cit.*, sp. 18, pl. i., f. 2.

Helix austrinus, Cox, *op. cit.*, sp. 22, pl. i., f. 3.

Helix medianus, Cox, *op. cit.*, sp. 19, pl. i., f. 1.

Helix helice, Cox, *op. cit.*, sp. 20.

Hab.—Widely distributed. This is an abundant species only at Recherche Bay. At Mount Bischoff, Pieman River, and Mount Wellington it is comparatively rare.

FLAMMULINA DIEMENENSIS, *Cox.*

Helix diemenensis, Cox, Proc. Zool. Soc., 1867 (1868), p. 723; Mon. Austr. Land Shells, 1868, p. 20, pl. vii., f. 6, 6a. *Id.*, Johnston, Proc. Roy. Soc. Tas., 1879 (1880), p. 49.

Flammulina diemenensis, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Helix wellingtonensis, Cox, Proc. Zool. Soc., 1867 (1868), p. 723; Mon. Austr. Land Shells, 1868, p. 29, pl. vii., f. 5, 5a.

Helix thompsoni, Cox in Legrand, Coll. Mon., 1871, sp. 73.

Helix daveyensis, Cox, *op. cit.*, sp. 35, pl. ii., f. 4.

Helix atkinsoni, sp. 62, Cox, *op. cit.*, pl. ii., f. 12.

Helix camilla, Cox, *op. cit.*, sp. 74.

Helix midsoni, Brazier in Legrand, Coll. Mon., 1874, Addenda.

Hab.—Generally distributed; also islands in Bass Straits. It is common all over the island.

FLAMMULINA AGNEWI, *Cox.*

Helix agnewi, Cox in Legrand, Coll. Mon., 1871, sp. 27, pl. i., f. 8.

Helix petterdi, Brazier in Legrand, sp. 67. Brazier, Proc. Zool. Soc., 1871, p. 696.

Var., *peroni*, Brazier, *op. cit.*

Hab.—So far this distinct species has only been found at the Huon Road, and the lower portion of Mount Wellington. It is evidently an uncommon shell.

Subgenus ALLODISCUS, *Pilsbry*, 1892.

Obs.—The following species are assigned to this subgenus by reason of their spirally striated nuclear whorls.

FLAMMULINA MATHINNÆ, *Petterd.*

Helix mathinnæ, Petterd, Mon. Tas. Land Shells, 1879, p. 26; Journ. Conch., ii., 1879, p. 214.

Flammulina mathinnæ, Suter, Ann. Mag. Hist., (6), xiii., 1894, p. 64.

Endodonta mathinnæ, Hedley, Proc. Linn. Soc. N. S. Wales, xxix., 1904, p. 182, pl. viii., f. 4, 6.

Hab.—Near Launceston, at a locality a little beyond the First Basin. It has not, so far, been located anywhere else. Doubtless one of the most beautifully sculptured species known in the island.

FLAMMULINA ROBLINI, *Petterd.*

(Pates lxxxiv., figs. 20, 21, 22.)

Helix roblini, Petterd, Mon. Tas. Land Shells, 1879, p. 38; Journ. Conch., ii., 1879, p. 210.

Obs.—Figured from an authentic specimen in the Tasmanian Museum. Height, 1; maj. diam., 2·2; min. diam., 1·8 mm.

Hab.—Distillery Creek, near Launceston. Extremely difficult to find.

FLAMMULINA CURACOEÆ, *Brazier.*

(Plate lxxxiii., figs. 14, 15, 16.)

Helix curacoeæ, Brazier, Proc. Zool. Soc., 1870, p. 659.

Helix ramsgatensis, Cox in Legrand, Coll. Mon., 1871, sp. 33, pl. i., f. 13.

Obs.—The original of our figure is from Recherche Bay and is in the Tasmanian Museum. Height, 3; maj. diam., 5·85; min. diam., 4·75 mm.

Hab.—Mount Wellington, Recherche Bay, and doubtfully at Mount Nelson. A rare species that has only been obtained at the localities indicated.

FLAMMULINA OTWAYENSIS, *Petterd.*

(Plate lxxxv., figs. 23, 24, 25).

Helix otwayensis, Petterd, Mon. Tas. Land Shells, 1879, p. 39; Journ. Conch., ii., 1879, p. 356. *Id.*, Johnston, Proc. Roy. Soc. Tas., 1879 (1880), p. 24.

Endodonta otwayensis, Hedley, Proc. Linn. Soc. N. S. Wales, xxvii., 1903, p. 605, pl. xxix., f. 10, 11, 12.

Var.—ALPINA, Johnston, in Petterd, *op. cit.*, p. 39.

Hab.—Surrey Hills.

Obs.—We figure a specimen of var. *alpina* from Surrey Hills, the property of the Tasmanian Museum. Height, 2·35; maj. diam., 3·9; min. diam., 3·25 mm.

Hab.—North-west Tasmania. Extends to Victoria. Another rare species that is apparently confined to the portion of the island indicated.

FLAMMULINA BISCHOFFENSIS, *Beddome*.

Helix bischoffensis, Beddome, Proc. Roy. Soc. Tas., 1879 (1880), p. 23. *Id.*, Petterd, Mon. Tas. Land Shells, 1879, p. 39.

Charopa bischoffensis, Hedley, Proc. Linn. Soc. N. S. Wales, (2), viii., 1892, p. 167, pl. i. 1, f. 1, 2, 3, 4.

Hab.—Mount Bischoff and Gad's Hill. At the first locality this is an abundant species, usually obtained in dense scrub under decaying timber.

FLAMMULINA GADENSIS, *Beddome*.

Helix gadensis, Beddome, Proc. Roy. Soc. Tas., 1879 (1880), p. 23. *Id.*, Petterd, Mon. Tasm. Land Shells, 1879, p. 29.

Charopa gadensis, Hedley, Proc. Linn. Soc. N. S. Wales, (2), viii., 1892, p. 168, pl. 1, 2, 3, 4.

Flammulina gadensis, Suter, Ann. Mag. Nat. Hist., (6), xiii., 1894, p. 64.

Hab.—Mount Bischoff and Gad's Hill. Obtained in and under decaying timber. It is only known from the localities stated, where it is apparently fairly abundant.

Family ZONITIDÆ.

Genus HELICARION, *Ferussac* (em.), 1879.HELICARION CUVIERI, *Ferussac*.

Helicarion cuvieri, Ferussac, Tabl. Syst., 1821, p. 20.

Helicarion cuvieri, Semper. Reis in Philipp., iii., 1870, p. 31, pl. iii., f. 7a, b, pl. vi., f. 11.

Vitrina nigra, Quoy & Gaimard, Voy. Astrolabe, Zool., ii., 1832, p. 135, pl. xi., f. 8, 9.

Vitrina verreauxi, Pfeiffer, Proc. Zool. Soc., 1849 (1850), p. 132. *Id.*, Reeve, Conch. Icon., xiii., 1862, pl. iv. f. 21.

Helicarion verreauxi, Hedley, Proc. Linn. Soc. N. S. Wales, (2), vi., 1891, p. 24, pl. ii., f. 10-12, pl. iii., f. 4.

Hab.—Throughout Tasmania. Extends to Victoria. Varies in size, the largest specimens coming from the extreme south of the islands.

HELIX VITRINIFORMIS, *Cox*.

Helix vitriniformis, Cox in Legrand, Coll. Mon., 1871, sp. 58.

Id., Legrand, Hardwicke's Science Gossip, xv., 1879, p. 70.

Obs.—In "Additions" to "Coll. Mon." Legrand observes that it is "without doubt a *Helicarion*." Because the name was

preoccupied by Mousson, Petterd (Mon., p. 55) proposed to call it *H. buttoni*. The species has not been figured and we are not aware that either a type or an authentic specimen now exists. Under these circumstances it may be abandoned.

Species erroneously accredited to Tasmania.

HELIX BISULCATA, Pfeiffer.

Obs.—*Helix bisulcata* was originally described by Pfeiffer,³ from Tasmania. Reeve⁴ further added that it was collected there by Gunn. An examination of the types of both species enabled Mr. E. R. Sykes⁵ to recognise *H. bisulcata* as the New Caledonian shell generally known by the later name of *Helix beraudi*.

HELIX SUBANGULATA, Pfeiffer.

Obs.—This species was also described by Pfeiffer⁶, from Tasmania, and Reeve again added that Gunn was the collector. At the instance of one of us Messrs. E. A. Smith and J. Ponsonby examined the type in the British Museum and identified it as *Planispira zonalis*, Ferussac, from Halmaheira.⁷

PUPA VARIUS, Bonnet.

Obs.—This was originally described by Bonnet⁸ as from Tasmania. It has been pointed out by Pilsbry⁹ that it is a variety of *Cerion glans*, Kuster, and is really a native of Nassau in the West Indies. Gunn misreported several marine West Indian shells as Tasmanian.¹⁰

HELIX PRUNUM, Ferussac.

Obs.—In the Paris Museum, we are told by Dr. H. Fischer¹¹, two specimens of *Helix prunum* are labelled as having been collected by Peron and Leseur in the D'Entrecasteaux Channel. Several species from North-west Australia such as *Arca semitorta*,

³ Pfeiffer—Proc. Zool. Soc., 1852, p. 135.

⁴ Reeve—Conch. Icon., viii., 1853, sp. 969.

⁵ Sykes—Journ. Malacol., iv., 1895, p. 72.

⁶ Pfeiffer—Proc. Zool. Soc., 1854, p. 53.

Hedley—Proc. Linn. Soc. N. S. Wales, xxvii., 1903, p. 604.

⁷ Bonnet—Rev. Mag. Zool., (2), xvi., 1864, p. 71, pl. vi., f. 3, 4.

⁹ Pilsbry—Man. Conch., (2), xiv., 1902, p. 255.

¹⁰ Hedley—Proc. Roy. Soc. Tas., 1902 (1903), p. 77.

¹¹ Fischer—Journ. de Conch., l., 1902, p. 385.

Conus pontificalis, or *Crenatula modiolaris* were reported from Tasmania by these collectors, who had evidently mixed specimens from the localities in question.

Species naturalised in Tasmania.

LIMAX MAXIMUS, *Linne.*

Obs.—Introduced in Hobart and Launceston.¹² Now extremely abundant all over the island.

LIMAX FLAVUS, *Linne.*

Launceston, Musson (*op. cit.*, p. 892).

AGRIOLIMAX AGRESTIS, *Linne.*

Obs.—This appears to be the species described by Tate¹³ from Tasmania as *Limax lograndi*.¹⁴ Widely distributed, but not so plentiful as the preceding.

MILAX GAGATES, *Draparnaud.*

Obs.—Described by Tate (*op. cit.*) from Tasmanian material as *Milax tasmanicus*. Very plentiful.

VALLONIA PULCHELLA, *Müller.*

Obs.—Abundant round Hobart.¹⁵

VITREA CELLARIA, *Müller.*

Obs.—Well established in Hobart and Launceston (Petterd, *op. cit.*).

HELIX ASPERSA, *Linne.*

Obs.—Introduced by Mr. C. E. Beddome to Hobart.¹⁶ Unfortunately too plentiful, both north and south.

VITREA CRYSTALLINA, *Müller.*

Obs.—Has not been previously recorded. It was taken by one of us (W.F.P) in Hobart. This was found in some numbers living in gardens.

¹² Musson—Proc. Linn. Soc. N. S. Wales, (2), v., 1890 (1891), p. 892.

¹³ Tate—Proc. Roy. Soc. Tas., 1880, p. 16).

¹⁴ Hedley—Proc. Linn. Soc. N. S. Wales, (2), v., 1891, p. 896.

¹⁵ Petterd—Mon. Tas. Land Shells, 1879, p. 43.

¹⁶ Petterd—Journ. Conch., ii., 1879, p. 96.

HELICELLA CAPERATA, *Montagu*.

Obs.—Observed by one of us (W.F.P.) at Risdon, near Hobart, in vast profusion a trifle above high water mark.

GEOSTILBIA APERTA, *Swainson*.

Obs.—Not hitherto recorded but collected by one of us (W.F.P.) at Hobart. Obtained from six inches to eight inches beneath the surface soil in a garden.

HELIX VERMICULATA, *Müller*.

Obs.—Now abundant at Ulverstone, Leven River. It is a native of Southern Europe and Northern Africa.